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The 5 Stage Approach: A blueprint for supporting the innovation process

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Abstract

It has long been recognised that entrepreneurs see potential opportunity in their external environment (Drucker, 1985) and are often considered to be extremely innovative and able to come up with fresh ideas for new businesses and products. However whilst entrepreneurs do not have to be extremely innovative to be successful, they do have to understand and manage the innovation process within their own business in order to build a successful enterprise. A good idea fulfils a need in the marketplace and in doing so generates profit for the business. In order to commercialise their ideas the entrepreneur will need to generate, filter and develop these ideas in order to build a framework or business model which will determine how the company will be constructed. This paper adopts an anecdotal approach to data gathering and draws on the experience of the researcher whilst building on seminal theory relating to innovation leading to a new, foundation process model for supporting innovation in any domain. This novel model combines a range of appropriate lenses, techniques and tools which can be applied to improve outcomes at each of the stages of the process identified namely: 1. finding the ideas, 2. generating more ideas, 3. filtering the ideas, 4. testing the ideas and 5. developing the ideas.

Keywords: Creativity, Innovation, Innovation Process, Value Proposition, 5 Stage Approach.

Rationale

This article draws on insight gained by the researcher from 20 years in the field of enterprise as enterprise educator, enterprise support practitioner and entrepreneur. Alan Murray has been a Lecturer in Business and Enterprise at the University of the West of Scotland since 2013 teaching enterprise and business subjects at undergraduate and postgraduate level. He has been conducting research in the field of business and enterprise for a number of years and also has extensive industry experience in the field of enterprise. Before entering academia he was a business adviser for the leading enterprise agency in Scotland; Business Gateway. In this role he delivered enterprise training and advisory support to over 1000 businesses across all sectors. Prior to this he was a Regional Enterprise Manager for the main provider of enterprise support for young people: The Prince's Scottish Youth Business Trust. In this capacity he assisted over 500 entrepreneurs to start and grow their businesses. He is also an experienced entrepreneur in his own right having run his own award winning business for nearly 20 years. During this entrepreneurial journey the researcher noted that whilst a degree of creativity is observable in every business the innovation process tends to be unstructured and ad hoc and as a result is generally ineffective and inefficient.

Value

This paper articulates a simple 5 stage process model (Figure 1) which is based on seminal research and extensive industry practice which can be applied to generate and develop creative ideas that offer potential commercial opportunity leading to the development of a credible business model. This will be of interest to enterprise educators and practitioners concerned with supporting innovation in either the academic or industry domain or early stage entrepreneurs seeking to commercialise their ideas whilst making the most effective use of available resources.

Limitations

This work is limited as it adopts an anecdotal approach whereby evidence is collected in an informal manner relying heavily on the personal testimony and experience of the researcher. This limitation can be addressed by future research which should be qualitative in nature and aimed at applying the 5 stage process proposed here with entrepreneurs in the pre start phase of developing their business in order to determine the efficacy of this model.

Paper Type

Concept paper

1. Introduction

The world is full of ideas but ideas are not opportunities, and opportunities are not ready-made to create a business around. Identifying which business ideas have real commercial potential is one of the most difficult challenges that an entrepreneur will face. In order to build a successful business, the entrepreneur needs first to consider how creativity and innovation supports the entrepreneurial process. There is broad consensus on the nature of innovation and its relationship to, and importance for, entrepreneurship (Schaper et al, 2013). Innovation is the successful implementation of creative ideas within an organisation or business and creativity can be described as the production of new and useful ideas in any domain. Creativity stems from creative thinking skills, knowledge and the motivation to find better ways of doing things leading to practical innovation. The extent of such innovation can be defined as disruptive or incremental. In terms of the nature of innovation Schumpeter (1934) identified 5 different types of innovation any of which can lead to a new and innovative business namely:

Introduce a new or improved product or service: innovation is often used by businesses to differentiate themselves from competitors and maintain a competitive edge or place in the market.

Introduce a new process: this is particularly important to sectors where the process is constantly being reviewed and developed in order to make improvements in efficiency.

Open up new markets: this could mean geographical markets e.g. exporting an established product into a new country or alternatively could involve a business attracting a new customer segment.

Identify new sources of raw material: with resources become increasingly more scarce this is becoming ever more important.

Create new types of industrial organisation: this generally involves developing different ways of working together to maximise their economic, social and cultural capital.

2. The new model

The new model proposed here (Figure 1) is designed to provide a foundation framework for developing ideas from inception to commercialisation. This novel model identifies a range of appropriate lenses, techniques and tools which can be applied at each of the stages of the process identified: 1. finding the ideas, 2. generating more ideas, 3. filtering the ideas, 4. testing the ideas and 5. developing the ideas.

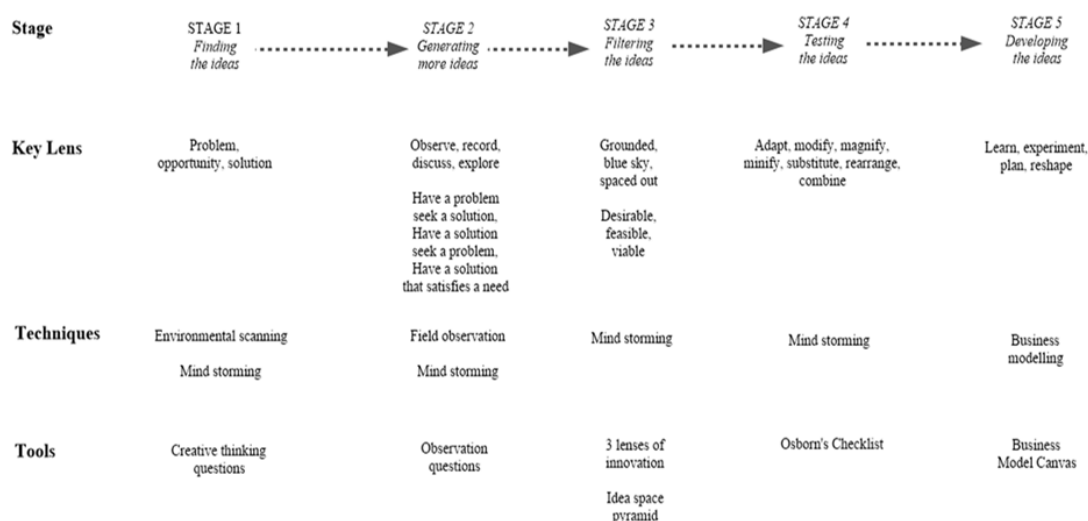


Figure 1: The 5 stage approach to supporting the innovation process

Stage 1. Finding the ideas

Innovation is driven by entrepreneurial knowledge (Scuotto et al 2018) and coming up with innovative ideas can be hard. However by combining the techniques of environmental scanning and mind storming it is possible to achieve better outcomes from the idea generation process. When attempting to generate ideas through mind storing the following lens should be applied in order to ensure the ideas generated have potential value: problem, opportunity, solution.

- **Problem:** what is the fundamental problem we are trying to solve for the customer?
- **Opportunity:** what is the extent of the opportunity being offered by solving this problem?
- **Solution:** what is the idea at the heart of this solution which will lead to a new product/service and business?

According to Oxman-Michelli (1991) in order to solve problems creative thinkers need to:

Reject standardised formats for problem solving: they often avoid tried and tested methods of problem solving and instead jump straight to possible answers without worrying about how to get there as they have self belief in their ability to get there.

Have an interest in a wide range of related and divergent fields: creative thinkers are generally curious by nature and they have an instinctive belief that they can improve their world. They often are found to be working on more than one idea at the same time.

Take multiple perspectives on a problem: creative thinkers commonly approach a problem as a challenge to be solved through the application of creativity and logic.

Use trial-and-error methods to experiment: generally people who innovate through the application of creativity have observed that problem for an extended period of time and have also been considering potential solutions for a long time also.

Be orientated on the future: effective creative thinkers focus on how circumstances could be in the future if their ideas were put into practice.

The techniques proposed here are environmental scanning and mind storming. Environmental scanning involves developing and nurturing a curiosity about the immediate, national, and international environment (Scuotto et al, 2018) to identify potential opportunities. According to Burns (2011) good ideas can come from anywhere but often arise from insights arising from observing the following phenomena:

The unexpected: In business strategies and plans often go wrong and this can lead to unexpected outcomes which may offer new opportunities.

The incongruity: Often there is a degree of frustration caused by the gap between what should happen and what does happen and this can be a driver for change.

The inadequacy in underlying processes: Often this is tolerated but the desire to do things better can stimulate innovation.

The changes in industry or market structure: Changes in the market whether predictable or unexpected can trigger creative ideas which are capable of solving problems resulting from that change.

These spaces are potential rich sources of good ideas which can be developed through the process of mind storming. The basic techniques for mind storming are widely known however the focus of mind storming should not be to try to generate good ideas but to try to generate lots of ideas. In this way by coming up with lots of ideas then inevitably there will be some good ideas in there. Generally the first ideas will be weak and the more valuable ideas will come once these have been exhausted. When mind storming all ideas should at this stage be considered equally valid as sometimes at first glance an idea might seem ridiculous but often it can be combined with a more ordinary idea to make it more valuable so every idea should therefore stay on the table.

When mind storming ideas for a new product or service, it can be helpful to think in terms of curing the customers pain and if the entrepreneur is able to come up with an idea that can do this then they could have something quite valuable. Potential sources of pain include not enough time, too difficult, too boring or not having enough resources and when attempting to stimulate creative thinking it is useful to use the following creative thinking questions as a tool for mind storming around the problem, opportunity, solution space:

- What would need to exist that does not currently exist?
- What would happen that doesn't happen now?
- What decisions would need to be made and executed?
- What accomplishments would be in place that are not now?
- What patterns of behaviour that are currently in place would be eliminated?

- If we apply this questioning approach to the example of an innovative company such as Virgin Galactic we can see how this works;

- What would need to exist that does not currently exist? - new designs of aircraft (White Knight 2 and Space Ship 2).
- What would happen that doesn't happen now? - tourists would travel into suborbital space.
- What decisions would need to be made and executed? - as this was totally new territory there was no blueprint to follow so Virgin Galactic recruited a team of experts who shared in the vision and who were creative and able to solve the type of problems associated with this type of project.
- What accomplishments would be in place that are not now? - first commercial space tourism operator.
- What patterns of behaviour that are currently in place would be eliminated? - the company has had to completely change the way it views itself and operates and come up with a completely different way of working.

Once we have generated some initial ideas we can then move onto the next stage..

Stage 2. Generating more ideas

Having generated some ideas it is now necessary to generate more ideas and this can be particularly challenging. It has been estimated that for every 11 ideas that enter the new product development process only one will be successfully launched. New ideas are at a premium and once again the more ideas generated the more likely it will be that amongst these will be something which is genuinely innovative.

Building on the concept of problem, opportunity, solution there are 3 basic approaches to generating useful ideas:

Have a problem and seek a solution: e.g. Edwin Land's Polaroid camera

Have a solution and seek a problem: e.g. 3M's Post-it notes

Identify a need and develop a solution: e.g. James Dyson's vacuum cleaner

Each of these approaches brings potential commercial opportunity however it is important to understand here that each approach also brings its own challenges which ultimately will impact upon the final business model.

A commercial opportunity is a situation where a new product, service or process can be introduced and sold at greater than its cost of production. In order to build on the initial idea and generate more ideas in order to develop this the entrepreneur should combine the techniques of field observation and mind storming. According to Drucker (1985) entrepreneurs see potential opportunity in their external environment from factors such as demographic changes such population changes in birth rates, medical improvements, etc., changes in perception, mood and meaning e.g. economic recession, culture, fashion etc. and new knowledge both scientific and non scientific. Having carried out some basic environmental scanning in the previous stage the entrepreneur now needs to conduct further research. Field observation provides the opportunity to engage with the subject in order to gain deeper insight of, and empathy for, the potential customer whose pain the entrepreneur is trying to cure. Field observation can take many forms but at its simplest this involves watching individuals going about their business in order to note down any insights and attach meaning to these insights. This, it is hoped, will potentially identify the different levels of customer need and lead to a commercial opportunity. The data obtained through field observation is then used as a basis for an additional round of mind storming.

When carrying out field observation the following process is recommended:

Observe: the operation (simply watch with an open mind)

Record: facts you observed (record only undisputed facts)

Discuss: any insights gained (to attach meaning to the insights gained)

Explore: possible improvements to the product (how to make it better)

Stage 3. Filtering the ideas

Having generated some initial ideas and generated more ideas around this the entrepreneur needs to then filter these ideas in order to create something that is capable of satisfying the customers needs and wants together and in doing so they can potentially pull the customer towards their offering.

At this stage it is important to categorise our ideas and here we can look to IDEO's Human Centred Design Toolkit which categorizes ideas as:

Spaced Out: these are the seemingly crazy or divergent ideas which may at first seem impossible or ridiculous but may still retain something of value.

Blue Sky: this is where we want our ideas to be. They could be built on a grounded idea but there is something potentially new and innovative about it.

Grounded: This is the everyday sort of idea that is either known to already exist or it is felt probably should exist. Grounded ideas should be avoided.

The model above is sometimes referred to as the Idea Space Pyramid and here the objective is to identify and develop blue sky ideas which offer the greatest commercial opportunity however Kelley (2001) proposes that simply generating lots of ideas and identifying which have potential is not enough and that in order to filter the strong ideas from the weak entrepreneurs should apply the 3 Lenses of Innovation namely;

Desirability: the product needs to be attractive to the customer.

Feasibility: it must be possible to obtain all the resources required to produce and deliver the product.

Viability: the cost of producing and/or delivering the product must not be prohibitive.

Once again mind storming is used at this stage to discuss the ideas generated to date and only the ideas which satisfy the requirements of both the Idea Space Pyramid and the 3 Lenses of Innovation should be taken forward to the next stage. At this stage the number of ideas being explored should be greatly reduced and only the strongest ideas should enter the testing phase.

Stage 4. Testing the ideas

Good ideas do not have to be new ideas and there are a number of ways to build upon products or material which already exist whilst still coming up with something new and innovative which can lead to a profit-driven concept. Osborn (1953) developed a checklist designed to help with the development of ideas and these approaches are still just as relevant today. The key approaches are as follows:

Adapt: how can this idea be used as it currently is without changing it's form? What other uses could it be adapted to?

Modify: can we change the idea in some form such as its meaning, material or shape etc.?

Magnify: Can we add a new element, ingredient or component to the idea or make the product at its heart longer, stronger, bigger etc.?

Minify: Can the product be split up into other units? Can we take something out or make it smaller or lighter etc.?

Substitute: Who else, where else or what else can we use instead? Are there other ingredients, raw materials, or approaches we could adopt instead?

Rearrange: Can we change parts around, use other layouts? Can we turn potential negatives into positives?

Combine: Can we combine or blend other parts or ideas into this idea?

During this stage the ideas are again mind stormed using the lens of Osborn's checklist in order to flesh out. Regardless how much we think we know about our business idea we need to learn more and be open to new ideas, conduct research and speak to a diverse range of people to help firm up the idea. Ideas can be new but generally they build on an idea or technology that already exists so at this stage it is important to look hard at similar models in order to establish what are the common and critical success factors. From this it is then possible to think about how it can be done better. Here it is often helpful to create simple prototypes or sketches of what the final product might look like and experiment and apply what has been learned from the research so far. This will allow theories to be tested leading to a stronger business model. It is advisable to begin testing the idea and the assumptions around it early in order to fail early.

Stage 5. Developing the ideas

At this stage any idea should still be viewed as a “work in progress” and the innovation process which converts that idea into something of value should be viewed as a cycle which is continuous. The key elements of this cycle are learn, experiments, plan, reshape and this approach should be used as the basis for converting the chosen idea into a workable business model. Kaplan and Warren (2013) define a business model as an explanation of how a business intends to create value in the market. It is a blend of critical factors such as products, services, cost and revenue components and distribution that come together to determine the operational infrastructure of the business and lead to what is often referred to as the “value proposition”. This is basically the final “offering” to the customer and if we take the example of a coffee shop then whilst a key component of the offering is the coffee itself we must also consider other aspects which are part of the experience such as the ambience within the shop, speed of service, attitude of staff, convenience of location and range of additional purchase options.

Any business model needs to be structured in such a way as to allow the entrepreneur to deliver their USP and there are numerous tools which the entrepreneur can access in order to develop their business model (Murray & Scuotto, 2015) however one of the most widely used tools currently being employed to develop a viable business model is the Business Model Canvas introduced by Alexander Osterwalder in 2008. It can be useful to think of the Business Model Canvas as a jigsaw puzzle of how the elements of the business come together. Each idea that is added to the canvas takes the entrepreneur closer to a workable business model. The Business Model Canvas has nine key elements to consider when exploring different business models and offers a structured framework and approach when seeking to translate an opportunity into a business. It can be helpful to think of the Business Model Canvas as a one page business plan that explains what the entrepreneur wants to do and how they intend to go about doing it. Once complete it is a relatively simple exercise to expand this into a full business plan which can be used to lever in the key resources needed to start and grow the business. In the same way that most people do not spend enough time at the idea generation stage it is also fair to say most do not spend enough time on the business model either and instead tend to go straight to writing a business plan or even starting the business without a plan at all. This is a major mistake as a strong business model is the foundation of a successful business. The key points to consider when building a business model using the Business Model Canvas are:

- **Key resources:** what key resources do we need to perform our activities which will be human, intellectual, financial or physical in nature?
- **Customer segments:** who are our customers, how do we segment these customers, and which are the most valuable to us?
- **Customer relationships:** how do we relate to these selected customers, what are the needs for each subgroup of customers and what value are they seeking?
- **Key partners:** we are part of a supply chain, who are the key partners that we need to succeed, why do we need them and why do they need us?
- **Key activities:** what are the core actions which must be undertaken in order to start and grow the business?
- **Channels:** how do we reach our customers?
- **Cost structure:** where are the major costs for our resources and activities?
- **Revenue streams:** what are the various ways the business will make money?
- **Value proposition:** what is unique about what we do, how can we do better than others, what is the offering we are providing?

The 9 building blocks of the Business Model Canvas can be further divided into 4 main areas of business; customers, offering, infrastructure and financial viability or alternatively the Business Model Canvas can be used to focus on the key principles of desirability, feasibility and viability and in doing so can identify weaknesses in the

business model in these areas. Feasibility itself can be further deconstructed to three basic components. Product feasibility considers whether the product can actually be made and delivered using currently available technology. Next we have market feasibility which asks the questions is it viable, does anyone want it, has the product any features that someone values and would be ready to pay for? Lastly there is economic feasibility and here the key questions are can the product be developed, manufactured and distributed while generating a profit and when everything is taken into account is it worth it? According to Kaplan and Warren (2013) good business models are scalable, create barriers to follower, align the interests of all stakeholders, provide value to all stakeholders, employ networks effectively, employ capital efficiently and provide sustainable high gross margins. However it is important to remember that even the most simple idea for a business, product or service can offer a variety of potential business models each offering a different set of opportunities and challenges and ultimately benefits for the customer. With this in mind concerns around desirability, feasibility and viability can be overcome by making changes to the business model itself in order to support sustainable business growth. However it should also be noted that it may take longer to grow a business in some specific sectors whilst some business models can be scaled up more quickly than others (Murray & Scuotto, 2015; Murray, 2019).

3. Conclusion

Clearly innovation and entrepreneurship go hand in hand and in the simplest terms innovation is the commercialisation of the creative process and lies at the very core of entrepreneurship itself (Schaper et al, 2013). Innovation is the means by which entrepreneurs shape opportunity and create value by introducing new products, services, processes or marketing approaches. Blue sky ideas create opportunities which through the process of innovation could potentially lead to positive outcomes such as; improved efficiency, quality of lives improved, cash saved etc. Good ideas are desirable, feasible and viable and use the 9 key components of the business model to provide the best “offering” to maximise value for the customer. The 5 phase approach presented here provides a staged foundation framework for supporting creativity and innovation which allows the entrepreneur to identify and seize the opportunity and develop their idea into a workable business model capable of commercialising their creativity.

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